

## DTIC Current Awareness: April 2003

Pandorf, C. E., Nindl, B. C., Montain, S. J., Castellani, J. W. and Frykman, P. N. (2003). *Reliability Assessment of Two Militarily Relevant Occupational Physical Performance Tests (Report No. M01-37)*. Natick, MA: Army Research Institute of Environmental Medicine. (DTIC No. ADA411139)

<http://handle.dtic.mil/100.2/ADA411139>

**Abstract:** Quantifying performance of physical tasks is important for: 1) evaluating employees in physically demanding occupations and 2) experiments in which associations between basic abilities and performance of more complex tasks are explored. In the military manual material handling of heavy loads and battlefield maneuvers are standard occupational tasks. Tests that quantify performance of such tasks must be reliable, as highly variable results have little meaning (Harman and Pandorf) 2000). Because motor learning (a problem-solving process whereby techniques are changed and perfected from repetition to repetition Bernstein, 1967!) and strategy development are normally associated with the practice of physical tests, a test may have to be repeated a number of times to obtain reliable data (Hopkins et al., 2001; Jackson et al., 2001). The goal of administering test practice sessions is to enable the test subjects (or workers) to become proficient enough so that the test results are reliable and may then be used as a credible measure of their physical performance.

Yuditsky, T., Sollenberger, R. L., Della Rocco, P. S., Friedman-Berg, F. and Manning, C. A. (2002). *Application of Color to Reduce Complexity in Air Traffic Control (Report No. DOT/FAA/CT-TN03/01)*. Atlantic City, NJ: William J. Hughes Technical Center. (DTIC No. ADA411937)

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**Abstract:** The United States Air Traffic Control (ATC) system is designed to provide for the safe and efficient flow of air traffic from origin to destination. The Federal Aviation Administration predicts that traffic levels will continue increasing over the foreseeable future. It is important to identify and reduce the factors that increase ATC complexity because of the potential consequences of errors. This research examined the application of specific information coding techniques to ATC displays as a method of reducing complexity in the en route environment. It tested color-coding of (a) aircraft destination airport, (b) overflights, and (c) Special Use Airspace. Eight Certified Professional Controllers participated in the high fidelity, human-in-the-loop simulation. Results indicated that these specific enhancements may improve controller performance and efficiency. However, when we presented all of the enhancements simultaneously, we did not find the

beneficial effects that occurred when we tested the enhancements individually. Further research is needed to systematically investigate the application of color to radar displays in the dynamic Air Traffic environment.